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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,384	08/14/2001	Richard Rox Anderson	101537-0028	1006

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EXAMINER	
KIM, VICKIE Y	
ART UNIT	**PAPER NUMBER**
1614	15

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/929,384	ANDERSON, RICHARD ROX	
	Examiner	Art Unit	
	Vickie Kim	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,14-17,29 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,14-17,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

1. Acknowledgement is made of amendment filed 8/14/2003. Upon entering the amendment, the claims 1, 3-4,15 and 29 are amended and the claims 10-13 and18-28 are canceled. New claim 30 is added.

2. The claims 1-9, 14-17 and 29-30 are pending and presented for the examination.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

New Matter

2. Claims 1-9 and 14-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Instant specification at pages 11-13 teaches that applicant's present invention(i.e. a method for treating a sebaceous gland disorder using the therapeutically effective amount of ALA wherein said effective amount includes 0.1-30% of ALA) can be achieved by the modification of pilosebaceous unit. Although the instant specification merely describes about the low dose of 5-

aminolevulinic acid(ALA) and the bacterial killing activities, the instant specification, however, fails to teach whether and how the said treatment is not carried out without modifying the sebaceous gland. Because the instant specification does not provide any information about claimed underlying mechanism, it would not conveys to any ordinary skilled artisan that applicants had the invention at the time of the invention was made. Therefore, it is noted that the subject matter found in the amended claims is subject to the new matter rejection.

Scope of Enablement

3. Claims 1-9, 15-17 and 30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims because the specification, while being enabling for treating specific sebaceous gland disorders such acne via topical photodynamic application of low dose of 5-aminolevulinic acid(ALA) wherein the said dose is effective to kill bacteria without modifying the sebaceous gland, does not reasonably provide enablement for treating all the sebaceous gland disorders using the said photodynamic application.

Attention is directed to In re Wands, 8 USPQ 1400 (CAFC 1988) at 1404 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing Ex parte Forman, 230 USPQ 546 (BdApls) at 547 the court recited eight factors:

1) The nature of the invention:

The invention provides related to a treatment of all the disorders related to sebaceous gland.

2) The state of the prior art:

The art does not recognizes or teach that no examples exist for efficacy of a single product, especially with such a low dose, against all types of claimed conditions or disease generally. The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention without undue experimentation.

3) The relative skill of those in the art:

The relative skill of the those in the art is high.

4) The predictability of the art:

The state of the prior art recognizes that the photodynamic treatment of sebaceous gland diseases or conditions remains highly unpredictable.

5) The breadth of the claims:

The claims are very broad.

6) The amount of direction or guidance provided:

The specification only exemplifies acne treatment. The specification discloses the low dose 5 ALA treatment that is specifically directed to the bacteria caused acne treatment but not other acne forms with different etiologies. Therefore, the specification has enabled acne treatment which is caused by acne forming bacterias. The specification provides no

direction and no guidance for treating other sebaceous gland disorders by killing the bacteria but not modifying the sebaceous gland.

7) The presence of absence of working example:

As stated above, the specification only exemplifies acne treatment with 20% topical ALA treatment. There is no working example using the claimed low dose(i.e. 0.1-1%) for acne treatment or any other sebaceous gland disorders.

8) The quality of experimentation necessary:

The true fact of the state of the art in photodynamic therapy is expressed well, "The significance of particular photodynamic treatment for modifying different aspects of biological activity cannot be predicted a priori but must be determined from the case to case by painstaking experimental study and when the above factors are weighed together, one of ordinary skill in the art would be burdened with undue "painstaking experimentation study " to determine the efficacy against all the disorders related to sebaceous gland.

4. Claim 29 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims because the specification, while being enabling for treating specific sebaceous gland disorders such acne via topical

photodynamic application of low dose of 5-aminolevulinic acid(ALA) wherein the said dose is effective to kill bacteria without modifying the sebaceous gland, does not reasonably provide enablement for preventing acne using the said photodynamic application.

According to prior art, acne can be caused not only bacteria (e.g. p-acnes) but also caused by others such as hormone imbalance, photo-chemical reaction(UV radiation), etc. Applicant fails to set forth the criteria that defines those characteristics defining "acne". Additionally, applicant fails to provide information allowing the skilled artisan to ascertain the claimed method of preventing "all types of acne diseases" without experimentation. Considering the state of the prior art, the relative sill of those in the art and the predictability of the art, no example exists for efficacy of a single product against all types of "acne". Therefore, based on the unpredictable nature of the invention and state of the prior art, the lack of guidance and working examples, and the extreme breadth of the claims, one skilled in the art could not use the entire scope of the claimed invention without undue experimentation.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-9, 14-17 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson(US 6183773) in view of Chen(US 2002/087205).

The claims are drawn to a treatment of sebaceous gland disorders using a topical application of low dose of 5-ALA and exposing the infiltrated section of skin to energy to cause photodynamic activation of the said 5-ALA to kill bacteria without modifying the sebaceous gland.

Anderson(US'773 hereafter) teaches a sebaceous gland disorders(e.g. acne) via topical photodynamic therapy using an energy activatable material(e.g. chromophores) to the skin, see abstract and claims. In the patented disclosure(US'773), the energy activatable materials such as chromophores includes not only methylene blue or indocyanine, but also any compounds photothermally or photochemically active, see column 5, lines 37-65. It also teaches that low dose of energy activatable materials(photosensitizer) about 0.1mM-1mM(see column 8, lines 35-49) and total fluence in the range of about 1-200J/cm2, for example of 10J/cm2(see column 15, lines 18 and column 8, line27). The said concentration can be converted to 0.1-1% using conventional conversion rule . For example, 0.5uL of active agent in 500mg gel was used in the treatment(see columns 16-17, experimentals). US'773 teaches a pulsed dye laser, diode laser arrays, sunlight, effective energy wavelength about 504, 510, or 1064nm for acne treatment (see col. 9, lines 1-13, col. 8, lines 1-10 and column 15, lines 1-20). A topically applied energy activatable material's skin penetration via pilosebaceous unit is also taught at column 10, lines 31-33. Pharmaceutical carriers including liposome or suspension of the active compounds are taught at columns 11-12.

US'773 further teaches Sebaceous gland disorders including hyperplasia, acne rosacea or acne vulgaria, see column 3, lines 40-42. Most of all, the said treatment is achieved by destructing bacteria , see column 12, lines 62-63. Thus, all the critical elements required by the claims are taught by the cited reference except 5-ALA as energy activatable material(photosensitizer).

Chen(US'205 hereafter) teaches that aminolevulinic acid as a photosensitizer and also functional equivalent agent that can be substitutable to mehtylene blue or indocyanine in photodynamic treatment, see claim 9.

As to claims 2 and 15, Kennedy et al(US'093 hereafter) teaches that protoporphyrin(PpIX) is an effective sphotosensitizer and 5-ALA is a precursor of a naturally occurring photosensitizer, protoporphyrin(PpIX). Topically applied 5-ALA would be metabolized into a clinically useful PpIX at all exocrine glands such as sebaceous glands or associated ducts, see column 5, lines 5-57. The said metabolism should be occurred before exposure to energy as evidenced by the suggestion taught by the cited reference. At column 7, lines 14-15, for instance, US'093 teaches the exposure of a therapeutic dose of photoactivated light into a tissues containing PpIX.

Thus, it would have been obvious to one of ordinary skill in the art to substitute the energy activatable materials(photosensitizer) taught by Anderson(US'773) with 5-ALA(a precursor of clinical useful photosensitizer, PpIX) when US'773 is taken in view of Chen (US'205 hereafter) and Kennedy because US'205 teaches that aminolevulinic acid is an effective photosensitizer and also functional equivalent agent that can be substitutable to mehtylene blue or indocyanine in photodynamic treatment, see claim 9.

One would have been motivated to do so, with reasonable expectation of success because it is always desirable to have extended therapeutic modalities to improve patient's compliance by enhancing patient satisfaction and increasing the selection option. US'093 teaches rapid inactivation of PpIX wherein the administration of ALA is recommended because the versatility of ALA enhances its industrial value and therapeutic efficacy.

The techniques and skills required for making such substitution is conventional knowledge or well within the skills of ordinary artisan as evidenced by the combination of these references.

Conclusion

7. No claim is allowed.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickie Kim whose telephone number is 571-272-0579(fax: 571-273-0579). The examiner can normally be reached on Tuesday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marianne Seidel can be reached on 571-272-0584. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-746-3165 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

VICKIE KIM
PRIMARY EXAMINER

February 23, 2004
Art unit 1614